

**REMARKS**

1. **Summary of Rejections in the Office Action of April 28, 2005**

At page 2, paragraph 2 of the Office Action, the Examiner objects to the drawings because Figure does not include a "Prior Art" legend. In accordance with the Examiner's suggestions, the Applicants have amended Figure 1 to include a "Prior Art" legend. Therefore, the Applicants respectfully request that the Examiner withdraw the objection to the drawings.

At page 2, paragraph 3 of the Office Action, the Examiner rejects claims 1, 2, and 7 under 35 U.S.C. § 102(b), as allegedly being anticipated by U.S. Patent No. 6,559,706 to Johnson. This is the only substantive rejection in the above-captioned patent application.

2. **35 U.S.C. § 102(b) Rejections**

At page 2, paragraph 3 of the Office Action, the Examiner rejects claims 1, 2, and 7 as allegedly being anticipated by Johnson.

The Applicants respectfully TRAVERSE the Examiner's obviousness rejections and assert the following remarks in response:

"A claim is anticipated if and only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP 2131. The Applicants maintain that the Examiner fails to establish that Johnson discloses or suggests each any every limitation of claims 1, 2, and 7.

a. **Independent Claims 1 and 7**

The Applicants' independent claim 1 describes a mixer circuit arrangement comprising "means for injecting a compensation current into the input stage so as to balance the differential current signals provided to the mixer stage." Similarly, the Applicants' independent claim 7 describes a method of reducing local oscillator breakthrough in a mixer circuit arrangement, comprising the step of "injecting a compensation current into the input stage so as to balance the differential current signals provided to the mixer stage."

For example, as set forth in the Background of the Invention Section of the above-captioned patent application, in known mixer circuit arrangements, the input stage includes two sides, and there is a risk that the collector currents provided to each of the two sides will be unbalanced, e.g., due to manufacturing tolerances. In order to address this problem associated with unbalanced collector currents at the input stage, the present invention, as set forth in independent claims 1 and 7, provides for the injection of a compensation current into the input stage, in which the compensation current balances the differential current signals provided to the mixer stage.

In contrast to the claimed invention as forth in independent claims 1 and 7, Johnson merely describes transmitting a **constant bias current** to the mixer circuit. For example, in Johnson, **each of** transistors 231 and 232 may transfer a **constant** current, e.g., 100 $\mu$ A, to transistors 400 and 401 of the mixer circuit, respectively, such that transistors 231 and 232 transfer the same, constant amount of current. This sets the current of the long pair bias transistor 300 to be 100 $\mu$ A. See, e.g., Johnson, Column 5, Lines 7-14. However, the bias current is selected independent of, i.e., the bias current is

unrelated to, any input stage balance problems associated with manufacturing tolerances (**Johnson assumes that the input currents are perfectly balanced**). Moreover, Johnson does not even discuss any problems associated with input stage imbalance associated with manufacturing tolerances. Therefore, the Applicants respectfully request that the Examiner withdraw the rejection of independent claims 1 and 7 at least for these reasons, and allow the same to issue in a U.S. patent.

**b. Dependent Claim 2**

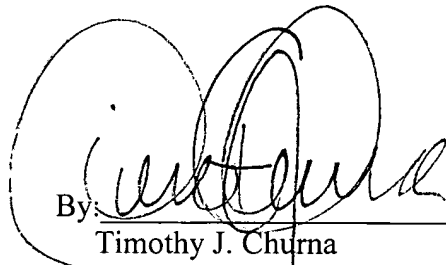
Claim 2 depends from allowable, independent claim 1. Therefore, the Applicants respectfully request that the Examiner also withdraw the rejection of claim 2, and allow the same to issue in a U.S. patent.

**CONCLUSION**

The Applicants respectfully submit that the above-titled patent application is in condition for allowance, and such action is earnestly requested. If the Examiner believes that an in-person or telephonic interview with the Applicants' representatives will in any way expedite the examination of the above-titled patent application, the Examiner is invited to contact the undersigned attorney of record. The Applicants believe that no fees are due as a result of this response. However, in the event of any variance between the fees determined the Applicants and those determined by the U.S. Patent and Trademark Office, please charge any such variance to the undersigned's Deposit Account No. 01-2300.

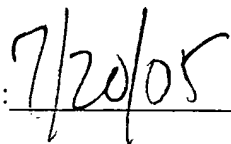
Respectfully submitted,

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Date: 

**AMENDMENTS TO THE DRAWINGS**

The attached drawing sheet includes changes to Figure 1. This sheet replaces the original sheet including Figure 1. Specifically, and in accordance with the Examiner's suggestions, the Applicants are amending Figure to include a "Prior Art" legend.

Attachments: Replacement drawing sheet

Annotated drawing sheet showing the changes to Figure 1

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**REQUEST FOR RECONSIDERATION**

The Applicants acknowledge with appreciation that the Examiner indicates that claims 3-6 would be allowable if rewritten in independent format, including the limitations of their base claim and any intervening claims. The Applicants respectfully request that the Examiner reconsider the above-captioned patent application in view of the foregoing amendments and the following remarks.

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# PRIOR ART

FIG. 1

